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10/588,386

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Shousei Yoshida

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EXAMINER

NGUYEN, LEON VIET Q

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/588,386

Applicant(s)

YOSHIDA, SHOUSEI

Examiner

LEON-VIET Q. NGUYEN

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2007.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-5, 7, 9-19, 21 and 23-30 is/are rejected.
7) ☒ Claim(s) 6, 8, 20 and 22 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 03 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB08)
Paper No(s)/Mail Date 8/31/06
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 8/31/06 was filed after the mailing date of 8/31/06. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thornton*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1, 3-5, 7, 9-15, 17-19, 21, and 23-30 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4, 6, 10, and 12-16 of U.S. Patent No. 7257408. Although the conflicting claims are not identical, they are not patentably distinct from each other.

Re claim 1, “a receiver for receiving propagation environment information, block error rate detection information and reception quality information from the opposite wireless apparatus” corresponds to “a propagation path environment estimator which outputs, as propagation path environment information, a result of estimation of an environment of a propagation path to said second radio communication apparatus on the basis of a signal from said second radio communication apparatus; a propagation path quality estimator which outputs, as propagation path quality information, a result of estimation of quality of the propagation path to said second radio communication apparatus on the basis of the signal from said second radio communication apparatus; an error detector which detects an error in the signal from said second radio communication apparatus and outputs the error as an error detection result”;

“a table selector for selecting one of plurality of tables in accordance with the received propagation environment information, in each one of the tables target error rates being correspondent to transmission modes” corresponds to “a transmission mode selector which includes a plurality of tables in which a plurality of transmission modes each having a threshold value corresponding to a value of the propagation path quality information are registered, selects one of said plurality of tables in accordance with the propagation path environment information” in claim 1 of US patent 7,257,408;

“a threshold controller for controlling threshold values of reception quality in accordance with the received block error rate detection information and the selected table” corresponds to “wherein said transmission mode selector of said second radio

communication apparatus rewrites, in accordance with the error detection result, a threshold value registered in the table to correspond to the selected transmission mode” in claim 1 of US patent 7,257,408; and

“a mode selector for selecting, with reference to comparison of the received reception quality information with the controlled threshold values, one of the transmission modes in order to transmit data to the opposite wireless apparatus with the selected transmission mode” corresponds to “a transmission mode selector which includes a plurality of tables in which a plurality of transmission modes each having a threshold value corresponding to a value of the propagation path quality information are registered, selects, as a mode for transmission to said first radio communication apparatus, one of the transmission modes registered in the selected table in accordance with the propagation path quality information” in claim 1 of US patent 7,257,408.

Claims 3 and 17 correspond to claim 2 of US patent 7,257,408.

Claims 4 and 18 correspond to claim 3 of US patent 7,257,408.

Claims 5 and 19 correspond to claim 4 of US patent 7,257,408.

Claims 7 and 21 correspond to claim 6 of US patent 7,257,408.

Claims 9 and 23 correspond to claim 8 of US patent 7,257,408.

Claims 10 and 24 correspond to claim 9 of US patent 7,257,408.

Claims 11 and 25 correspond to claim 10 of US patent 7,257,408.

Claims 12 and 26 correspond to claim 11 of US patent 7,257,408.

Claims 13 and 27 correspond to claims 12 and 13 of US patent 7,257,408.

Claims 14 and 28 correspond to claims 14 and 15 of US patent 7,257,408.

Claims 15, 29, and 30 correspond to claim 1 of US patent 7,257,408.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1-5, 7, 9-19, 21, and 23-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art (hereby referred to as AAPA) in view of Hanaoka et al (US20030156659).**

Re claim 1, AAPA teaches a wireless apparatus for wirelessly communicating with an opposite wireless apparatus, comprising:

a receiver (102 in fig. 1) for receiving propagation environment information (page 3, third paragraph, it would be obvious to receive the propagation environment information to know if the propagation environment information is changed), block error rate detection information (106 in fig. 1, page 4 third paragraph) and reception quality information from the opposite wireless apparatus (106 in fig. 1, page 2 second paragraph);

a table selector (it would be obvious to have a device to select the table shown in figs. 6A-6C), in each one of the tables target error rates being correspondent to transmission modes (fig. 6B and 6C, page 4 fourth paragraph - page 5 second paragraph);

a threshold controller for controlling threshold values of reception quality (107 in fig. 1) in accordance with the received block error rate detection information and the selected table (figs. 6B and 6C);

a mode selector (108 in fig. 1) for selecting, with reference to comparison of the received reception quality information with the controlled threshold values (fig. 6A, page 3 second paragraph), one of the transmission modes in order to transmit data to the opposite wireless apparatus with the selected transmission mode (page 3 second paragraph).

AAPA fails to teach selecting one of plurality of tables in accordance with the received propagation environment information. However Hanaoka teaches selecting one of plurality of tables in accordance with the received propagation environment information (§0025).

Therefore taking the combined teachings of AAPA and Hanaoka as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the feature of Hanaoka into the apparatus of AAPA. The motivation to combine Hanaoka and AAPA would be always minimize the error rate and establish high communication quality (abstract of Hanaoka).

Re claim 2, the modified invention of AAPA teaches a wireless apparatus wherein the threshold controller increases the threshold values by Δ up or decreases the threshold value by Δ down (figs. 6B and 6C of AAPA, page 5 second paragraph of AAPA), where the target error rate is $1/N$, Δ up = $(N-1) \times \Delta$ down (page 5 second paragraph of AAPA).

Re claim 3, the modified invention of AAPA teaches a wireless apparatus wherein the propagation environment information comprises the number of path(s) in multipath environment (page 3 third paragraph of AAPA).

Re claim 4, the modified invention of AAPA fails to explicitly teach a wireless apparatus wherein each of the tables corresponds to one of the numbers of the paths P_1, P_2, \dots, P_R , where R, P_1, P_2, \dots, P_R are natural numbers and $P_1 < P_2 < \dots < P_R$. However it is well known that the when path number is be used as environment information, making the plurality of tables corresponding the path number $P_1, P_2 \dots P_R$ is within the capabilities of a person with ordinary skill in the art and it is a common way of sorting the path numbers.

Therefore, it would have been obvious for a person with ordinary skill in the art at the time the invention was made to design a plurality of tables as claimed so that no matter what the path number would be, there would be a table that would match to it.

Re claim 5, the modified invention of AAPA teaches a wireless apparatus wherein the propagation environment information comprises a maximum Doppler frequency (page 3 third paragraph of AAPA).

Re claim 7, the modified invention of AAPA teaches a wireless apparatus wherein the propagation environment information comprises delay dispersion (page 3 third paragraph of AAPA).

Re claims 9-12, the modified invention of AAPA fails to explicitly teach wherein each of the tables corresponds to the combinations as claimed. However one of ordinary skill in the art would have found it obvious to group the number of paths, maximum Doppler frequency, and delay dispersion (as taught in page 3 third paragraph of AAPA) in a table format, which is well known in the art.

Therefore, it would have been obvious for a person with ordinary skill in the art at the time the invention was made to design a plurality of tables as claimed so that no matter what the path number would be, there would be a table that would match to it.

Re claim 13, the modified invention of AAPA teaches a wireless apparatus wherein the reception quality information comprises at least one of:

a rate between a signal power and a noise power (page 2 first paragraph of AAPA);

a rate between a signal power and an interference power; and

a rate between a signal power and a noise interference power.

Re claim 14, the modified invention of AAPA teaches a wireless apparatus parameters of the transmission mode comprises at least one of:

type of modulation (page 3 first paragraph of AAPA); and

an encoding rate of an error correction.

Re claim 15, AAPA teaches a wireless communication system comprising a first wireless apparatus and a second wireless apparatus, wherein the first wireless apparatus comprises:

a measurer for measuring reception quality of communication with the second wireless apparatus on the basis of signals received from the second wireless apparatus (page 2 second paragraph) to output a result of the measurement as reception quality information;

an estimator for estimating propagation environment between the first and second wireless apparatus on the basis of signals received from the second wireless apparatus (page 3, third paragraph, it would be obvious to receive the propagation environment information to know if the propagation environment information is changed) to output a result of the estimation as propagation environment information;

an detector for detecting block errors from signals received from the second wireless apparatus (106 in fig. 1, page 4 third paragraph) to output a result of the detection as an error detection result; and

a transmitter for transmitting the reception quality information, the propagation environment information and the error detection result to the second wireless apparatus together with data signals (transmitter 131 in fig. 2),

wherein the second wireless apparatus comprises:

a table selector (it would be obvious to have a device to select the table shown in figs. 6A-6C), in each one of the tables target error rates being correspondent to transmission modes (fig. 6B and 6C, page 4 fourth paragraph - page 5 second paragraph);

a threshold controller for controlling threshold values of reception quality (107 in fig. 1) in accordance with the received block error rate detection information and the selected table (figs. 6B and 6C);

a mode selector (108 in fig. 1) for selecting, with reference to comparison of the received reception quality information with the controlled threshold values (fig. 6A, page 3 second paragraph), one of the transmission modes in order to transmit data to the opposite wireless apparatus with the selected transmission mode (page 3 second paragraph).

AAPA fails to teach selecting one of plurality of tables in accordance with the received propagation environment information. However Hanaoka teaches selecting one of plurality of tables in accordance with the received propagation environment information (¶0025).

Therefore taking the combined teachings of AAPA and Hanaoka as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the feature of Hanaoka into the apparatus of AAPA. The motivation to combine Hanaoka and AAPA would be always minimize the error rate and establish high communication quality (abstract of Hanaoka).

Re claim 16, all of the claim limitations have been analyzed and rejected with respect to claim 2.

Re claim 17, all of the claim limitations have been analyzed and rejected with respect to claim 3.

Re claim 18, all of the claim limitations have been analyzed and rejected with respect to claim 4.

Re claim 19, all of the claim limitations have been analyzed and rejected with respect to claim 5.

Re claim 21, all of the claim limitations have been analyzed and rejected with respect to claim 7.

Re claims 23-26, all of the claim limitations have been analyzed and rejected with respect to claims 9-12.

Re claim 27, all of the claim limitations have been analyzed and rejected with respect to claim 13.

Re claim 28, all of the claim limitations have been analyzed and rejected with respect to claim 14.

Re claim 29, all of the claim limitations have been analyzed and rejected with respect to claim 1. It would be obvious and necessary to have a method of using the circuit as claimed in claim 1.

Re claim 30, all of the claim limitations have been analyzed and rejected with respect to claim 15. It would be obvious and necessary to have a method of using the circuit as claimed in claim 15.

Allowable Subject Matter

3. Claims 6, 8, 20, and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEON-VIET Q. NGUYEN whose telephone number is (571)270-1185. The examiner can normally be reached on Monday-Friday, alternate Friday off, 7:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Leon-Viet Q Nguyen/
Examiner, Art Unit 2611

/David C. Payne/
Supervisory Patent Examiner, Art Unit 2611